REMARKS

Claim 24 has been amended. Claims 1-44 remain in the application. Reconsideration of the application in view of the amendments and the remarks to follow is requested.

Claim 24 has been amended to address minor informalities noted during review, however, these amendments do not alter the scope of the claims.

Fig. 1 has been amended to correct minor informalities noted during review. Revised formal drawing is also enclosed herewith. The Examiner's approval of the modifications to Fig. 1 is respectfully requested.

The specification has been amended to correct minor informalities noted during review. The amendments to the specification and drawing are supported at least by text appearing at p. 7, line 15 through p. 14, line 2 of the specification as originally filed. No new matter is introduced by the amendments to the specification, drawing or claims.

Claims 1-44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hodson et al., U.S. Patent No. 5,655,940, in view of Benjamin et al., U.S. Patent No. 4,808,983. Applicant traverses for at least the following reasons.

First, the proposed combination fails to provide the invention as claimed. This is explained in more detail below.

The Examiner states (p.2) that Hodson et al. discloses "tiling 4 or more emitter base plates, independently addressable, to provide a large area

display with a fast display refresh rate." The Examiner further states that Benjamin et al. provides addressing of a monolithic display from opposite sides to increase the refresh rate.

However, this combination fails to provide "forming a plurality of discrete, segmented regions of field emitter tips by removing at least portions of the substrate; individual discrete, segmented regions being electrically isolated into separately-addressable regions of field emitter tips", as recited in Applicant's claim 1.

This combination also fails to provide "forming a plurality field emitters from material of the substrate, the emitters being arranged into more than one demarcated, independently-addressable region of emitters", as recited in Applicant's independent claim 10.

This combination additionally fails to provide "partitioning the matrix into a plurality of discretely-addressable sub-matrices of field emitters", as recited in Applicant's independent claim 18.

This combination further fails to provide "providing row and column address lines operably coupled with the matrix and collectively configured to address the field emitters" or to provide the row and column address lines wherein "at least one of the row or column address lines having a length within the matrix which is sufficient to address less than all of the field emitters which lie in the direction along which the at least one row or column address line extends within the matrix", as recited in Applicant's independent claim 18.

Further, the proposed combination fails to provide "forming a plurality of discrete, segmented regions of field emitter tips", fails to provide the formation "by removing at least portions of the substrate" and fails to provide "individual discrete, segmented regions being electrically isolated into separately-addressable regions of field emitter tips", as recited in Applicant's independent claim 24.

Additionally, the proposed combination fails to provide "forming a plurality field emitters from material of the substrate, the emitters being arranged into more than one demarcated, independently-addressable region of emitters" and also fails to provide "providing address circuitry operably coupled with the field emitters and configured to independently address individual regions of the emitters", as recited in Applicant's independent claim 28.

Moreover, the proposed combination fails to provide "partitioning the matrix into a plurality of discretely-addressable sub-matrices of field emitters", as recited in Applicant's independent claim 32, and also fails to provide "providing row and column address lines operably coupled with the matrix and collectively configured to address the field emitters, at least one of the row or column address lines having a length within the matrix which is sufficient to address less than all of the field emitters which lie in the direction along which the at least one row or column address line extends within the matrix", as recited in Applicant's independent claim 32.

Furthermore, the proposed combination fails to provide "A base plate for a field emission display (FED) device comprising a monolithic substrate configured into a base plate for a field emission display (FED) and comprising a plurality of regions of plural field emitter tips which are comprised of material of the substrate, individual regions of the plurality of regions being discrete and electrically isolated from one another and configured to be separately addressed", as recited in Applicant's independent claim 33.

In addition, the proposed combination fails to provide "a monolithic substrate configured into a base plate for a field emission display (FED) and comprising a plurality of regions of plural field emitter tips which are comprised of material of the substrate, individual regions of the plurality of regions being discrete and electrically isolated from one another and configured to be separately addressed", as recited in Applicant's independent claim 37.

As well, the proposed combination fails to provide "a monolithic addressable matrix of rows and columns of field emitters, the matrix having a perimetral edge defining length and width dimensions of the matrix; the matrix being partitioned into a plurality of discretely-addressable sub-matrices of field emitters" and also fails to provide "row and column address lines operably coupled with the matrix and collectively configured to address the field emitters, at least one of the row or column address lines having a length within the matrix which is sufficient to address less than all of the field

emitters which lie in the direction along which the at least one row or column address line extends within the matrix", as recited in claim 41.

More specifically, Benjamin et al. teach formation of liquid crystal displays (see, e.g., Examples 1-3). Benjamin et al. teach tiling IC chips 9 on the bottom substrate 3 to provide the addressing circuitry. Benjamin et al. are silent with respect to field emission devices. Benjamin et al. do, however, teach that tiling of the IC chips 9 is a technologically significant challenge, and describes tooling and techniques for accomplishing this (col. 11, line 60 through col. 12, line 45).

Hodson et al. teach a large field emission device comprising a single anode and multiple cathodes. Hodson et al. teach (Title; Abstract; Field of the Invention; col. 3, lines 21-29; Summary; col. 4, lines 6-9; col. 6, lines 27-43) that tiling allows larger FEDs to be constructed than was previously possible, because of technological limits on the area of the emitter arrays that could be produced.

Simply stating a conclusion that "it would have been obvious" to combine teachings from references or to modify or augment teachings from a reference does not meet the standards for a rejection under 35 U.S.C. §103(a) as set forth in The Manual of Patent Examination Procedure at §706.02(j) entitled "Contents of a 35 U.S.C. 103 Rejection." This MPEP section states that three basic criteria must be met in order to establish a prima facie case of obviousness.

The first of these is that there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. The Office Action fails to show that the subject matter of claims 1-44 is suggested or motivated by the teachings of the reference.

The second requirement of MPEP §706.02(j) is that there must be a reasonable expectation of success. The third requirement is that the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

Since all of the cited references are silent with respect to aspects of the invention as enumerated above, combining their teachings cannot possibly provide the invention as recited in any of Applicant's claims. As a result, there cannot possibly be a reasonable expectation of success from combining the teachings of the references.

The rejection of claims 1-44 fails all three components of the test for an obviousness rejection as set forth in the MPEP. For at least these reasons, the rejection of claims 1-44 should be withdrawn, and claims 1-44 should be allowed.

Second, Applicants note the requirements of MPEP §2145(X), entitled "ARGUING IMPROPER RATIONALES FOR COMBINING REFERENCES", section D(2), which states, inter alia, that "It is improper to combine references where the references teach away from their combinations."

Applicants note the requirements of MPEP §2141.02, entitled "Differences Between Prior Art and Claimed Invention", stating that "PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS". This MPEP section further states that "A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984)".

Hodson et al. teach (col. 1, lines 43-50) that "Currently, liquid crystal displays are used almost universally for laptop and notebook computers. In comparison to a CRT, these displays provide poor contrast, permit only a limited range of viewing angles, and, in color versions, consume power at rates which are incompatible with extended battery operation. In addition, color liquid crystal screens tend to be far more costly than CRT's of equal screen size."

As a result, Hodson et al. teach that "As a result of the drawbacks of liquid crystal display technology, thin film field emission display technology has been receiving increasing attention from industry." Hodson et al. plainly and clearly teach away from liquid crystal display technology. Accordingly, there is no motivation, as a matter of law, to attempt to combine the teachings of Hodson et al. with those of Benjamin et al. For at least these reasons, the rejection of claims 1-44 is defective and should be withdrawn, and claims 1-44 should be allowed.

Third, Hodson et al. teach (Title; Abstract; Field of the Invention; col. 3, lines 21-29; Summary; col. 4, lines 6-9; col. 6, lines 27-43) that tiling allows larger FEDs to be constructed than was previously possible, because of technological limits on the area of the emitter arrays that could be produced. It is a main intent of Hodson et al. to provide larger FEDs via tiling than could be produced using monolithic cathodes. This main intent is destroyed in attempting to modify the teachings of Hodson et al. to try to arrive at the subject matter of Applicant's claims 1, 10, 24 and 28 (reciting formation of emitter tips by removal of material from a substrate), 8 and 37 (reciting a monolithic base plate), 18, 32 and 41 (reciting a monolithic addressable matrix of field emitters), 33 (reciting a monolithic substrate configured into a base plate for a field emission display (FED) and comprising a plurality of regions of plural field emitter tips which are comprised of material of the substrate).

Applicants note the requirements of MPEP §2143.01, entitled "Suggestion or Motivation to Modify the References", stating that "THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE". This MPEP section further states that "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)."

Since the intended purpose of Hodson et al. is clearly to form larger FEDs by tiling of emitter arrays, attempting to modify the teachings of Hodson et al. to arrive at the subject matter of Applicant's claims clearly renders the teachings of Hodson et al. unsuitable for their intended purpose. As a result, there is no motivation, as a matter of law, to modify the teachings of Hodson et al. to try to arrive at Applicant's claimed subject matter as recited in any of Applicant's claims. For at least these reasons, the rejection of claims 1-44 is clearly defective and should be withdrawn, and claims 1-44 should be allowed.

Dependent claims 2-9, 11-17, 19-23, 25-27, 29-31, 34-36, 38-40 and 42-44 are allowable as depending from allowable base claims and for their own recited features which are neither shown nor suggested by the prior art.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page(s) are captioned "**Version with markings to show changes made**."

In view of the foregoing, allowance of claims 1-44 is requested. The Examiner is requested to phone the undersigned in the event that the next Office Action is one other than a Notice of Allowance. The undersigned is available for telephone consultation at any time during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: Nov. 19, 2001

By: _____
Frederick M. Fliegel, Ph.D.
Reg. No. 36,138

Version with markings to show changes made

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 09/251,172
Filing Date ..... February 17, 1999
Inventor ..... Ammar Derraa
Assignee ..... Micron Technology, Inc.
Group Art Unit 2879
Examiner ..... K. Ramsey
Attorney's Docket No. MI30-034
Title: Methods of Forming a Base Plate for a Field Emission Display (FED) Device, Methods of Forming a Field Emission Display (FED) Device, Base Plates for Field Emission Display (FED) Devices, and Field Emission Display (FED) Devices

37 CFR §1.121(b)(1)(iii) AND 37 CFR §1.121(c)(1)(ii)
FILING REQUIREMENTS TO ACCOMPANY RESPONSE TO SEPTEMBER 24, 2001 OFFICE ACTION

Deletions are bracketed, additions are underlined.

In the Specification

The paragraph extending from page 13, line 15 to page 14, line 2, has been amended as shown below:

Various advantages can be achieved by the embodiments described above. Improvements can be achieved in the refresh rates of the ultimately-formed FED devices which are faster than those of identical displays with non-partitioned base plates. [This is because the RC time constant scales linearly with the length of the address lines, i.e. row and column address lines.] In addition, larger displays can be constructed for applications where a large viewing area is desired, such as an engineering work station or for presentations to larger groups of people in a conference room setting. Additionally, higher resolution can be achieved in larger displays which is comparable with the resolution in smaller displays. Moreover, multiple images can be viewed and updated independently of other images.

In the Drawing

Fig. 1 has been amended as shown in the enclosed red-line version of the drawing, to correct minor informalities noted during review.

In the Claims

24. (Amended) A method of forming a field emission display (FED) device comprising:

providing a substrate configurable into a base plate for a field emission display (FED);

forming a plurality of discrete, segmented regions of field emitter tips by [at least] removing at least portions of the substrate; individual discrete, segmented regions being electrically isolated into separately-addressable regions of field emitter tips;

providing a face plate supporting areas of luminescent material; and

mounting the face plate in operable proximity with the substrate.

END OF DOCUMENT